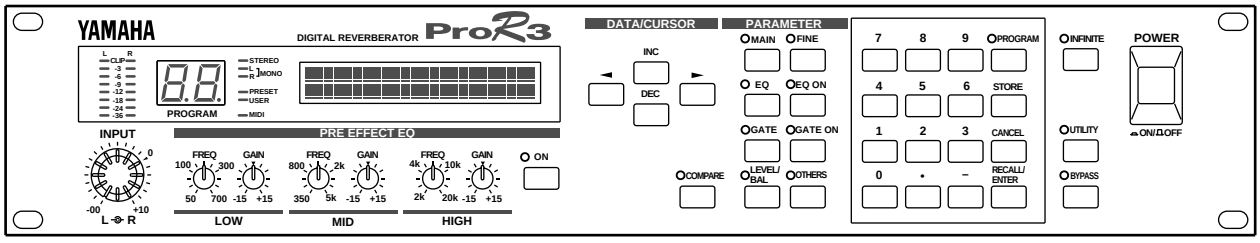
YAMAHA

DIGITAL REVERBERATOR

ProR3

Owner's Manual
Manuel d'instructions
Bedienungsanleitung
Manual del propietario



FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. NOTE: This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:
   Relocate either this product or the device that is being affected by the interference.
   Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.
   In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.
   If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	: EARTH
BLUE	: NEUTRAL
BROWN	: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

* This applies only to products distributed by YAMAHA KEMBLE MUSIC (U.K.) LTD.

ADVARSEL!
Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandoren.

VARNING
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Precautions

Water warning

Do not expose the device to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.

Avoid excessive heat, humidity, dust, and vibration

Keep the unit away from locations where it is likely to be exposed to high temperatures or humidity – such as near radiators, stoves, in direct sunlight, etc. Avoid locations which are subject to excessive dust accumulation. Extreme vibrations can cause mechanical damage.

Avoid physical shocks

Strong physical shocks can damage the unit. Handle it with care.

Install the unit with plenty of space for ventilation

This unit should be installed in such a way as to maintain a gap of 10cm or more between the rear of the unit and the wall. This will prevent heat build-up inside the unit and possible fire hazard.

Do not open the unit, or attempt repairs or modifications yourself

This product contains no user-serviceable parts. Prefer all maintenance to qualified Yamaha service personnel. Opening the unit and/or tampering with the internal circuitry will void the warranty.

Make sure the power is off before making or removing connections

Always turn the power OFF prior to connecting or disconnecting cables. This is important to prevent damage to the unit itself as well as other connected equipment.

Handle cables carefully

Always plug and unplug cables – including the AC cord – by gripping the connector, not the cord.

Clean with a soft dry cloth

Never use solvents such as benzine or thinner to clean the unit. Wipe it clean with a soft, dry cloth.

Always use the correct power source

Make sure the power source voltage specified on the rear panel matches your local AC mains supply:

US & Canadian Model: 120V AC, 60 Hz
General Model: 230V AC, 50 Hz
UK Model: 240V AC, 50 Hz

Back-up battery

This unit contains a long-life lithium battery which maintains the contents of user memory locations even when the unit is off. With normal use, the battery should last approximately five years. If the battery voltage falls below a certain level, the message "WARNING LOW BATTERY" will appear on the screen when the power is turned on. If this occurs, have the battery replaced at a qualified Yamaha service center.

Warning: DO NOT ATTEMPT TO REPLACE THE BATTERY YOURSELF. OPENING THE UNIT AND/OR TAMPERING WITH THE INTERNAL CIRCUITRY WILL VOID THE WARRANTY.

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Introduction

Thank you for purchasing the Yamaha ProR3 Digital Reverberator. The ProR3 marks a new era in Yamaha's reverberation technology. Third-generation Yamaha digital signal processors (DSP) with 32 bit digital signal processing and high-performance 20 bit linear A/D and D/A converters provide unprecedented density and resolution, with breathtakingly dynamic impact. The ultra-high quality analog input and output circuitry achieves a dynamic range of 110 dB, providing incredibly natural reverberance with a noiseless decay.

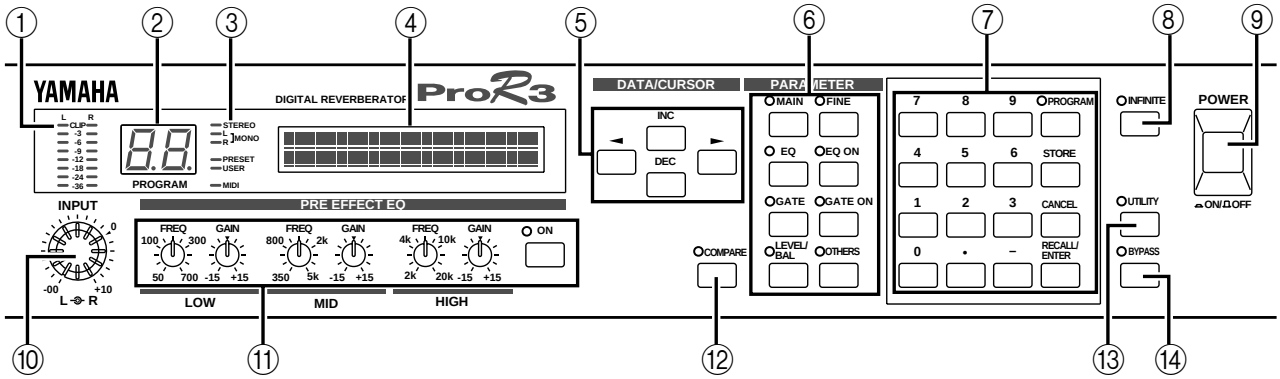
The ProR3 has 10 primary effects; reverb, early reflection, room simulation, and combinations of reverb with echo, chorus, flanging, pitch change, and auto pan, etc. A pre-effect EQ is provided in front of the primary effect, and following the primary effect, dynamic filter, compressor, EQ, gate, level, and balance stages are provided. In stereo input mode, full stereo reverb is provided. In addition to 90 preset programs for immediate use, 90 user memory locations are provided for your own custom settings.

The stereo inputs and outputs feature both balanced XLR type and 1/4" phone jack connectors, for connection to a variety of equipment. The input and output level selectors (–10 dB/+4 dB) also allow flexibility in level adjustment. Programs can be selected from an external MIDI device, and bulk data dumps can also be performed.

The Yamaha ProR3 digital reverberator is the result of an important step forward in digital reverberation technology. It provides a previously unattainable level of rich reverberation effects, sound quality, and operability, and is an ideal reverberator for use in any situation, from the home studio to pro audio recording and PA work.

In order to take full advantage of the ProR3's functionality and enjoy years of trouble-free use, please read this manual carefully.

Front panel



1 INPUT level meters (L/R)

This is a stereo LED meter with 8 segments for each channel. The segments respectively indicate levels of –36 dB, –24 dB, –18 dB, –12 dB, –9 dB, –6 dB, –3 dB, and CLIP.

> **Note:** *The level meters are located in the circuitry after the A/D converter. This means that the CLIP indicator will indicate clipping of the digital signal. Adjust the input level so that the CLIP indicator does not light.*

2 PROGRAM number display

This is a two-digit seven-segment display that indicates the currently selected program number.

If this display is blinking, a new program has been selected but its contents have not yet been recalled.

3 Status indicators

These are six LEDs which indicate program status and other functions of the ProR3.

STEREO, L/R MONO

The input mode of the currently selected program is shown by three indicators. The ProR3 has four input modes (Stereo, LR/Mix, R-Mono, L-Mono), selected by the UTILITY key. When both L/R Mono indicators are lit, LR/Mix mode is selected.

PRESET/USER

These indicators show the program status. Use the PROGRAM key to select the status. When the PRESET indicator is lit, preset programs are selected. When the USER indicator is lit, user programs are selected.

MIDI

This indicator will light while MIDI data is being received from an external device connected to the MIDI IN connector.

4 LCD

This backlit LCD shows the name of the selected program and the program parameter values. Messages related to operation will also appear here.

5 DATA/CURSOR keys

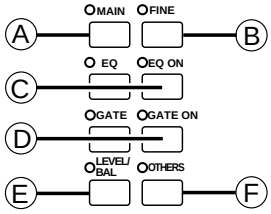
The DATA keys (INC) (DEC) are used to modify the value of the selected parameter.

The CURSOR keys (◄) (►) are used to select parameters displayed in the LCD.

When the PROGRAM indicator is lit, the DATA keys are used to select the program that you wish to recall.

6 PARAMETER keys

These keys select effect parameters. Each time a key is pressed, it will cycle through the parameter pages, and will finally return to the first page.



6-A MAIN key

This key accesses the main parameters. The indicator will light, and you will be able to edit the main parameters of the program.

6-B FINE key

This key accesses secondary parameters of the program. The indicator will light, and you will be able to edit the secondary parameters of the program.

6-C EQ, EQ ON keys

The EQ key accesses the parameters of the three-band post-effect equalizer. The indicator will light, and you will be able to edit the EQ type, frequency, gain, and Q for each band.

The EQ ON key turns the post-effect equalizer on/off. When the equalizer is on, the green indicator will light.

	LOW	MID	HIGH
Type	Peaking/Shelving	Peaking	Peaking/Shelving
Gain	±15 dB	±15 dB	±15 dB
Frequency	32 Hz to 2.2 kHz	250 Hz to 5.6 kHz	500 Hz to 20 kHz
Q	0.1 to 5.0	0.1 to 5.0	0.1 to 5.0

6-D GATE, GATE ON keys

The GATE key accesses the gate parameters. The indicator will light, and you will be able to edit the level and balance, etc.

The GATE ON key turns the gate on/off. When the gate is on, the green indicator will light.

6-E LEVEL/BAL key

This key lets you adjust the effect balance (the level balance between the direct sound and the effect sound). When you press the key, the red indicator will light.

6-F OTHERS key

This key has two functions. When you press the key, the red indicator will light.

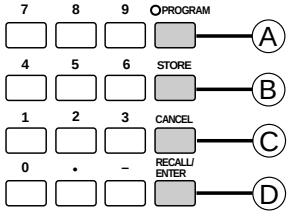
① Specify a program title (see page 16).
② Select the parameters to be controlled by MIDI Control Change messages (see page 16 and 35).

7 Numeric keys

These keys are used to directly input the number of a program that you wish to recall, or to input parameter values.

When you use the numeric keys to input a parameter value, the value will blink until it is finalized. Press the RECALL/ENTER key to finalize the value. To return to the original value, press the CANCEL key. Some parameters cannot be entered using the numeric keys.

To specify a negative value (for example an equalizer gain of –9 dB), use the "–" key. To specify a value with a decimal point (for example an equalizer Q of 2.5), use the "." key.



7-A PROGRAM key

This key is used when selecting programs. Each time you press the key, the program status will alternate between PRESET and USER.

7-B STORE key

This key is used to store the settings of a program that you created.

7-C CANCEL key

This key is used to cancel a value that was entered by the numeric keys.

7-D RECALL/ENTER key

This key is used to recall a program whose number was entered by the numeric keys, or to finalize a parameter value.

8 INFINITE key

When this key is pressed, the indicator will light, and the RevTime parameter will be dramatically lengthened. This produces the effect of a "freeze-frame" or "stop-motion" sound.

9 POWER switch

This switch turns the power on/off.

When the power is turned on, the program that was last being used when the power was turned off will be selected.

10 INPUT level control (L, R)

The inner knob is the input level for the left channel, and the outer knob is the input level for the right channel. The knobs are coaxial for convenience when you are adjusting the level of a stereo source.

11 PRE EFFECT EQ, ON controls

This is a three-band parametric equalizer that equalizes the signal before the effect. The center frequency and gain can be set for each band.

The ON key turns the pre-effect equalizer on/off. When the equalizer is on, the green indicator will light.

	LOW	MID	HIGH
Frequency	50 Hz to 700 Hz	350 Hz to 5 kHz	2 kHz to 20 kHz
Gain	±15 dB	±15 dB	±15 dB

12 COMPARE key

After editing the parameters of a program, you can use this key to compare the edited sound with the sound of the program at the time it was recalled. When the red indicator is lit, you are hearing the original sound of the program.

13 UTILITY key

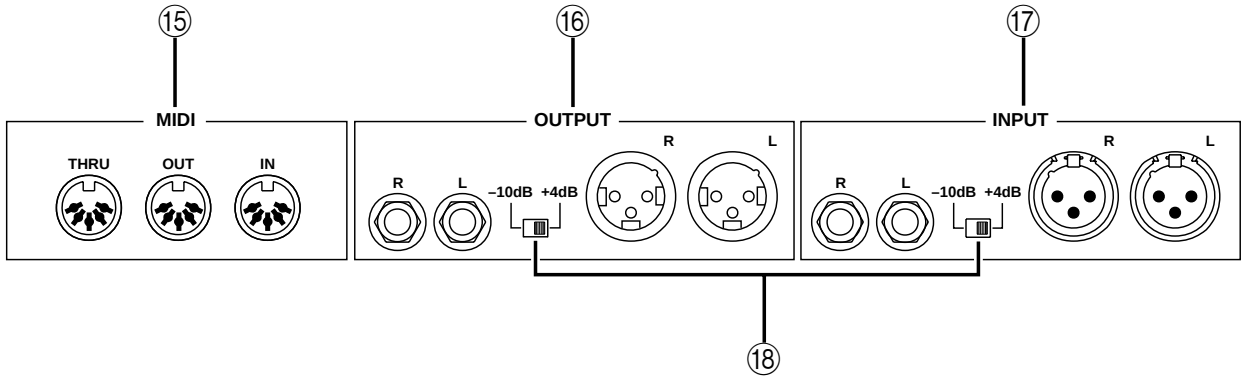
Use this key when you wish to make settings for system parameters such as memory protect, input mode, and MIDI parameters. When you press the key, the red indicator will light.

14 BYPASS key

When this key is pressed, the input signal will be output directly without passing through the effect, and the red indicator will light.

This is a convenient way to quickly compare the unprocessed sound with the processed sound.

Rear panel



15 MIDI connectors

These are 5 pin DIN type standard MIDI IN, MIDI OUT, and MIDI THRU connectors.

These connectors are used when transmitting program change messages or control change messages from an external MIDI device to the ProR3, or when transmitting program bulk dump data from the ProR3 to another device.

16 OUTPUT jacks

These are balanced output jacks which output the analog return signal to your mixer or multi-track recorder, etc. A pair of XLR-3-32 connectors and a pair of 1/4" phone jacks are provided. The level select switch selects either +4 dB or –10 dB as the nominal output level.

17 INPUT jacks

These are balanced input jacks which input the analog signal from your mixer or multi-track recorder to the ProR3. If the source is monaural, use the UTILITY key to select an appropriate input jack (see page 33).

A pair of XLR-3-31 connectors and a pair of 1/4" phone jacks are provided.

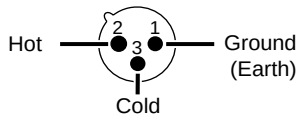
The level select switch selects either +4 dB or –10 dB as the nominal input level.

18 Level select switches

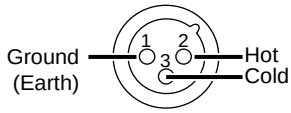
These switches change the level of the input/output jacks between +4 dB and –10 dB.

Set them to match the level of the connected equipment.

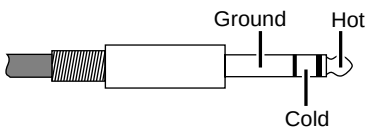
XLR3-31 type pin arrangement



XLR3-32 type pin arrangement



1/4" phone plug signal connections



Basic use – using a preset program –

Here's how to select a preset program and use it without adjusting any parameters.

Connections

1. **Connect the sound source to the INPUT jacks.**

   Warning: Before making connections, make sure that the power is turned off for all your equipment.

   For a stereo sound source, connect the outputs of both channels to the INPUT jacks. For a monaural sound source, use the L input jack.

   If the sound source has XLR connectors, make connections using the XLR-3-31 connectors of the ProR3. If not, use the 1/4" phone jacks.

2. **Connect the OUTPUT jacks to the mixer or other external device.**

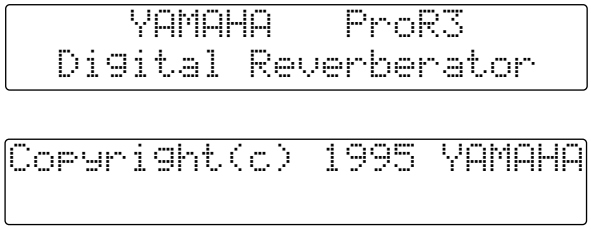
   If the mixer has XLR connectors, make connections using the XLR-3-32 connectors of the ProR3. If not, use the 1/4" phone jacks.

   Note: *You may also use a cable which converts between XLR connectors and TRS 1/4" phone jacks.*

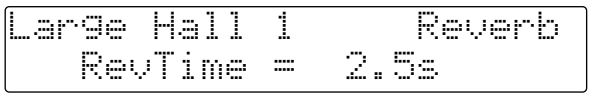
3. **Connect the ProR3 to an AC outlet.**

Turning the power on (off)

1. **Press the POWER switch to turn the power on. (Pressing it again will turn the power off.)**



   The initial display will appear for a few seconds, and then the program that was being used when the power was last turned off will be selected.



   Note: *When turning on the equipment in a system, always turn on each device in sequence of the signal flow, starting from signal sources and ending with the power amp. Observing this sequence will prevent damage to speakers, to other equipment, or to your hearing which can be caused by the noise that occurs when a device is turned on. Turn on the ProR3 before the other connected equipment. When turning off the power of the system, turn off devices starting with the power amp and working backward toward the signal sources.*

Adjusting the input level

When the power has been turned on for the ProR3 and the other equipment, make the sound sources produce sound, and adjust the input level of the ProR3.

1. **Rotate the INPUT level controls while watching the INPUT level meters.**
   Set the levels to achieve maximum S/N ratio while not allowing the CLIP indicators to light.

Selecting effect programs

There are two ways to select programs.

- Use the INC/DEC keys.
  Press the INC or DEC key to select a program.
  If you hold down a key, the program numbers will change in succession.
- Use the numeric keys and the RECALL/ENTER key.

  ① Use the numeric keys to select the program number, and the PROGRAM indicator will blink.
  If you enter the wrong number, press the CANCEL key, and use the numeric keys to enter the number once again.
  If you select a number other than 1–90, the display will indicate "**NO PROGRAM**No Type". Press the CANCEL key to return to the previous display.

  ② Press the RECALL/ENTER key to recall the program.
  When the program is recalled, the PROGRAM indicator will change from blinking to lit.
  If you select a number other than 1–90 and press the RECALL/ENTER key, the display will indicate "*Program Number Error*". Press the CANCEL key to return to the previous display.

Note: *If the display asks "Recall? Are you sure?" when you select a program, this indicates that the data of the program has been edited. If you wish to save this edited data, use the procedure "Saving a program" given on page 16.*
If you do not need to save the edited data, press the RECALL/ENTER key to recall the selected program.

Preset Program List

No.	Title	Type	Description
Large Hall			
1	**Large Hall 1**	Reverb	The ProR3's standard hall-type reverb. Simulates a large hall with good acoustics, and is suitable for any instrument.
2	**Large Hall 2**	Reverb	
3	**New Hall**	Reverb	A program with a slight delay between the sparse early reflections and the rich reverberation.
4	**Wide Hall**	Reverb	A program simulating a spacious and uncolored hall.
5	**Breathless Hall**	Reverb	A bit of character. Bright, strong, and somewhat long reverb.
Medium Hall			
6	**Medium Hall 1**	Reverb	A standard medium-sized hall reverb.
7	**Medium Hall 2**	Reverb	
8	**Wonder Hall**	Reverb	Reverb with a lighter feel than the large hall type. Try it with percussion.
9	**Gothic Hall**	Rev+Cho	A combination of chorus and a somewhat long reverb. Try it on solo instruments, vocals, or pads.
10	**Bright Ham**	Reverb	A bright medium sized hall.
Small Hall			
11	**Small Hall 1**	Reverb	An idealized small hall with a small stage.
12	**Small Hall 2**	Reverb	An even smaller hall. The internal compressor is on, producing a damped reverb sound.
13	**Small Dark Hall**	Rev+ER	Small hall, somewhat darker in tone. Try it on vocals in a minor key.
14	**Pool**	Reverb	Small hall program with many early reflections.
15	**Open Hall**	Reverb	Small hall with open space. For vocals.
Large Room			
16	**Large Room 1**	Reverb	Simulation of a large room with hard walls. A thick and somewhat idiosyncratic sound. Try it on percussion.
17	**Large Room 2**	Reverb	Compared to Large Room 1, a room with more naturalness and transparency.
18	**Mood Room**	Reverb	Large room with slightly darker tone.
19	**Soft Room**	Reverb	Large room with mellow tone.
20	**Attack Room**	Rev+Pit	Combines a pitch change (±9 cents) with a room. Creates depth for vocals or solo instruments.
Medium Room			
21	**Medium Room 1**	Reverb	Simulates a medium sized studio with good acoustics. Apply to a 2-channel source for "live in the studio."
22	**Medium Room 2**	Reverb	Simulates a somewhat live recording studio with wood walls.
23	**Dark Room**	Reverb	A studio slightly smaller than Medium Room 2, with a natural acoustics.
24	**Quick Room**	Reverb	A dry-sounding studio with wood and metal walls. For brass or percussion.
25	**Aquarium**	RoomSim	Simulates the reverberation of a medium-sized studio. Try on bass drum.
26	**Wood Room**	RoomSim	Adds the airiness of a medium room to thicken the sound.
27	**Chorus Room**	Rev+Cho	
28	**Delayed Room**	RoomSim	An echo room with an 82 ms pre-delay. For sax or solo instruments.
29	**Comp. Chamber**	RoomSim	A room program for snare or percussion. Use Threshold to adjust the degree of compression.
Small Room			
30	**Small Room 1**	RoomSim	The small room programs are extremely short reverbs created with hip-hop in mind. These are meant to be applied in small amounts, so that the sound appears either dry or to have the natural acoustics of a studio. They are especially effective on sequenced instruments, synth brass, and on instruments recorded in a dead studio.
31	**Small Room 2**	Rev+Cho	
32	**Small Studio**	RoomSim	
33	**Bright Studio**	Reverb	
34	**Kick Chamber**	RoomSim	
35	**Tiny Room**	ER	
36	**Near You**	Rev+Pit	

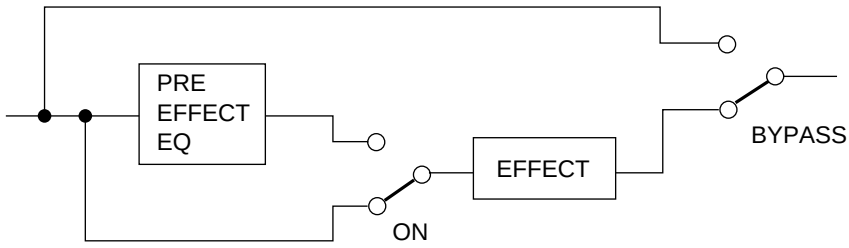
No.	Title	Type	Description
Special Room			
37	**Power Drum Room**	RoomSim	Adds a strong live ambiance to drums. Try it on sampled drums.
38	**Soft Space**	Rev+Cho	A percussive short reverb with chorus added. Gives ambiance to drums, lead instruments, and vocals.
39	**Droid Short**	Reverb	Simulates an early and extremely expensive digital reverb unit.
40	**Droid Long**	Reverb	
41	**Tile Room**	RoomSim	The bright ambiance of a tiled room.
42	**Coliseum**	Reverb	Long reverb of a wide space, simulating a coliseum.
43	**Opera**	Reverb	Fairly long reverb with a 52 ms delay between the early reflections and the reverb.
44	**Delay Hall**	Ech→Rev	A combination of hall-type reverb and delay. Set the L and R Delay and IniDly parameters to match the tempo of the song.
45	**Train Station**	Reverb	Try this when you need echoing footsteps in a late-night train station.
46	**Tile Bathroom**	ER	These programs provide early reflections alone. Try them when you wish to add room ambiance to drums, percussion, guitar, line-recorded bass, electric piano, and solo instruments.
47	**Closet**	ER	
48	**Motel Chorus**	ER	
49	**Pitch Room**	Pit→Rev	Reverb applied to a pitch change (±8 cents). For vocals or chorus.
Plate			
50	**Beauty Plate**	Reverb	Sub-reverb settings have been boosted. Try it on an electric piano.
51	**Arena Plate**	Reverb	Simulates a gigantic arena like the Budokan in Tokyo.
52	**Vocal Plate 1**	Reverb	Try it on vocals. Especially nice for ballads.
53	**Vocal Plate 2**	Reverb	Reverb with a darker feel than Vocal Plate 1.
54	**Vocalese**	Rev+Cho	Chorus is lightly applied to the reverb. Try it on guitar and keyboards.
55	**String Plate**	Reverb	Try it on strings for an even more beautiful sound.
56	**Home Plate**	Reverb	Metal plate reverb from the good old days.
57	**LA Plate Short**	Reverb	Simulations of the bright and crisp plate reverb preferred in studios on the US west coast.
58	**LA Plate Long**	Reverb	
59	**Short Perc.Plate**	Reverb	Short and bright percussion plate. Set the IniDelay parameter according to the tempo.
60	**Long Plate**	Reverb	Longer plate reverb. Try it on organ pads etc.
Gate			
61	**ER Gate 1**	ER	These are gated reverbs with only the early reflections. ER Gate 1 is a natural and uncolored gate. ER Gate 2 is a bit metallic. ER for Kick is for when you want to fatten up a thin sounding bass drum. Adjust the Liveness and RoomSize parameters as desired. As the names suggest, Power Gate 1 and Power Gate 2 are for when you want to make the drums really stand out.
62	**ER Gate 2**	ER	
63	**ER for Kick**	ER	
64	**Power Gate 1**	ER	
65	**Power Gate 2**	ER	
66	**Room Gate**	ER	
67	**Gated Rev 1**	Reverb	These are standard combinations of reverb + noise gate. Compared to the gated programs consisting only of E.Ref, more detailed settings are required to fit them to your song, but this also means that you have more control.
68	**Gated Rev 2**	Reverb	
69	**Reverse Gate 1**	ER	These simulate the gated reverb effect produced by a tape running backwards, like the Reverse Gate programs on the REV7 and REV5. Make settings to match the tempo of the song.
70	**Reverse Gate 2**	ER	
Effect Reverb			
71	**Reverb Flange 1**	Reverb	Reverb Flange 1 is natural. Reverb Flange 2 through Reverb Flange 4 sound progressively deeper and more showy.
72	**Reverb Flange 2**	Rev→Flg	
73	**Reverb Flange 3**	Rev→Flg	
74	**Reverb Flange 4**	Rev→Flg	
75	**Dark Moon**	Rev→Flg	
76	**Filter Flange**	Rev→Flg	

No.	Title	Type	Description
77	**Super Long Decay**	Reverb	An effect like an extremely long tunnel.
78	**Slow Pan Reverb**	Rev→Pan	A fairly long reverb is panned slowly.
79	**Sub Aqua**	Pit→Rev	Water sounds producing a “sprong” when applied to a rim shot. When applied to strings, a saw-like sound results.
80	**Thud**	Pit→Rev	Turns an acoustic instrument into a synth! Produces an auto-wah like effect when applied to guitar.
81	**Alien Attack**	Pit→Rev	
82	**High Filter**	Reverb	Effect reverb with a sense of definite pitch created by the dynamic filter. Try it on rim shots, or percussive instruments and sound effects.
83	**High Mid Filter**	Reverb	
84	**Low Mid Filter**	Reverb	
85	**Low Filter**	Reverb	
86	**Chorus Reverb**	Rev+Cho	This program combines a chorus effect and reverb to create spaciousness and depth.
87	**Symphonic Rev 1**	Rev+Sym	A multi-phase chorus combined symphonic effect and reverb creates spaciousness and depth, with a multi-phase chorus.
88	**Symphonic Rev 2**	Sym→Rev	
89	**Echo Reverb 1**	Ech→Rev	Reverb is applied to a stereo feedback echo of up to 400 ms left and right.
90	**Echo Reverb 2**	Ech→Rev	

Advanced uses (1)

The bypass function

When you press the BYPASS key, the circuit will be switched so that the input sound is output directly. This function provides an easy way to make a quick comparison between the sound processed by the effect program and the unprocessed sound. When the effect is bypassed, the red indicator will light.



Pre-effect EQ

The PRE EFFECT EQ controls allow you to make settings for the three-band pre-effect equalizer. For each band, you can set the center frequency and the gain.

	LOW	MID	HIGH
Frequency	50 Hz to 700 Hz	350 Hz to 5 kHz	2 kHz to 20 kHz
Gain	±15 dB	±15 dB	±15 dB

1. **Press the PRE EFFECT EQ ON key to turn on the equalizer.**
   The green indicator will light.

2. **Select a band, and rotate its control knobs to adjust the gain.**

3. **Rotate the FREQ (frequency) control of the selected band.**
   To hear the effect of the equalizer, first adjust the gain level of the selected band, and then adjust the frequency.

   The equalizer control settings are not stored in the program memory. If the equalizer is turned on, its settings will affect all programs.

> **Note:** *The pre-effect equalizer controls are located in the circuit after the INPUT level meters. This means that you need to be careful when setting gain levels, since even if the gain is raised excessively and digital clipping occurs, this will not be indicated by the meters.*

The INFINITE function

The INFINITE function lets you set an extremely long reverb time. This is effective when used on the ending of a song, etc.

The INFINITE key can be used in the following two ways.

- Press and immediately release the INFINITE key.
  The reverb time will be set to the maximum. Press the key once again and the reverb time will return to the original value.
- Press hold the INFINITE key.
  The reverb time will be set to the maximum as long as you continue holding the key. When you release the key, the reverb time will return to the original value.

Note: *For programs whose primary effect is early reflection (ER) and do not have a RevTime parameter, therefore this key will have no effect.*

Advanced uses (2) – Editing functions –

Preset programs are "ready-made" programs. In contrast, user programs can be tailor-made to meet your needs. This section explains how you can edit your own programs.

How programs are organized

Each of the ProR3 program consists of two main stages; the primary effect and the secondary effects.

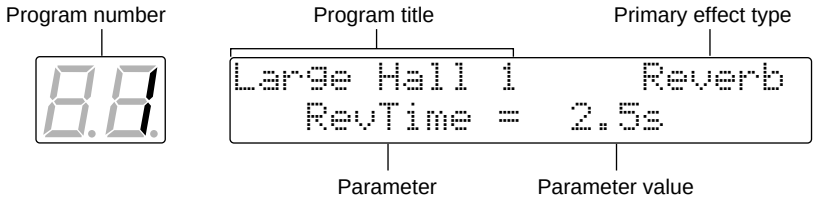
Of these, the primary effect can be selected from one of the following ten types, and will depend on the program that you select.

Single type:	Reverb, ER, Room Sim
Compound type:	Rev+Ech, Rev+ER, Rev+Cho, Rev+Sym, Rev+Flg, Rev+Pit, Rev+PAN

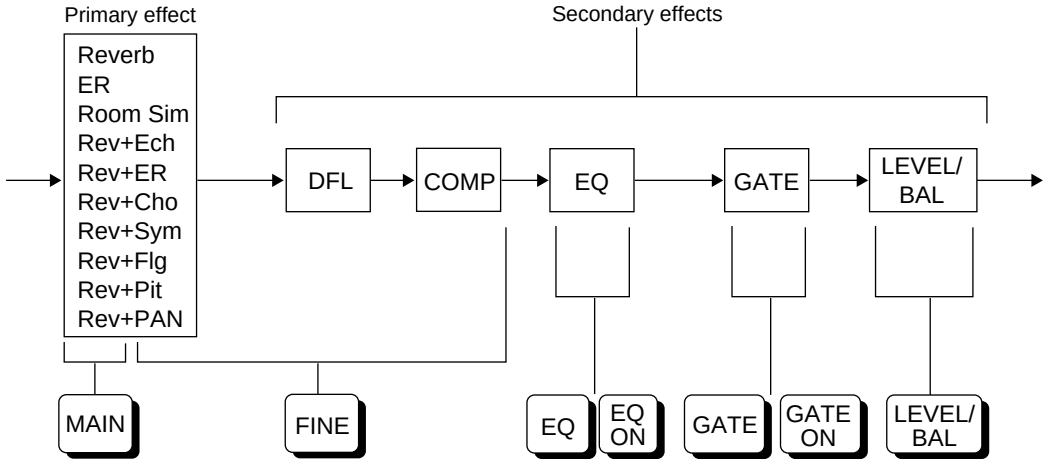
> The "+" in compound type effects such as "Rev+Ech" means that these effects simultaneously apply both reverb (Rev) and echo (Ech). You can select the order in which these occur; i.e., whether reverb will be applied and then echo, or echo applied and then reverb.

The secondary effects are supplementary, and are the following five which are provided for each program: DFL (dynamic filter), COMP (compressor), EQ, GATE, and LEVEL/BAL.

The primary effect is the decisive factor in determining the character of the entire effect, and if you know its type, you will have a good idea of how the entire program will sound. For this reason, when the program is shown in the LCD, the primary effect type used by that program will be shown along with the program number and title, and is also given in the list.



The ProR3 has separate dedicated keys for recalling the parameters of the primary effect and the secondary effects.

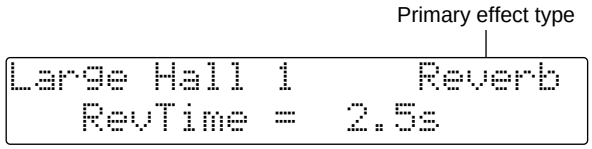


Editing procedure

1) Selecting a program

Refer to the list of preset programs on page 9 or the included preset program list, and select the number of the program that you wish to edit.

At this time, it is not possible to change the type of the primary effect, so make your choice of type carefully.



2) Editing parameters

1. **Press the key which accesses the program parameter that you wish to edit. For example to edit primary effect parameters, press the MAIN key or FINE key. To edit GATE parameters, press the GATE key.**
   Pages 18 and following have lists of the parameters which are accessed by each key.
2. **Repeatedly press the key until the parameter that you wish to edit appears.**
3. **Use the cursor keys (◄) (►) to move the cursor to the parameter that you wish to edit.**
4. **There are two ways to set the value of a parameter.**
   - Press the INC or DEC key to set the value.
     If you continue holding down a key, the value will continue to change.
   - Use the numeric keys and the RECALL/ENTER key to set the value.
     ① Use the numeric keys to enter the value, and the data will blink. If you make a mistake, press the CANCEL key, and input the value once again using the numeric keys.
     ② Press the RECALL/ENTER key to finalize the setting.
5. **By pressing the COMPARE key, you can compare the sound after the parameter was edited with the sound that the program had when it was recalled.**
6. **If you wish to edit the parameter again, return to step 3.**
7. **If you wish to edit a different parameter in the same effect, return to step 2.**
8. **If you wish to edit a different effect, refer to step 1.**

3) Entering a title

You can enter a program name of up to 16 characters for each of your own effect programs.

1. **Press the OTHERS key.**
   The red indicator will light. Each time you press the OTHERS key, the title edit page and two controller parameter pages will alternate.

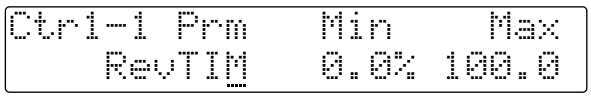
2. **Use the CURSOR keys (◄) (►) to select the location of the character.**
   The cursor will indicate the location when a character can be selected. Each time you press the CURSOR key, the cursor will move to the next/previous character location, and will "wrap around" when it reaches the end of the title.

3. **Press the INC or DEC key to change the character. You can also use the numeric keys to enter numerals.**
   If you continue holding the INC or DEC key, the character will continue to change. The numerals 0 through 9, a "–" (minus), and a "." (decimal point) can be entered using the numeric keys.

4) Setting MIDI control parameters

You can specify parameters to be controlled via MIDI, and the range of control. (refer page 35)

1. **Press the OTHERS key to access the MIDI control page.**



2. **Use the CURSOR keys (◄) (►) to select parameters.**

3. **Use the INC and DEC keys to set the parameters.**

Control 1 Prm	–	Select the parameter controlled by MIDI controller 1
Control 1 Min	0.0–100.0%	Minimum value of the range of MIDI controller 1
Control 1 Max	0.0–100.0%	Maximum value of the range of MIDI controller 1
Control 2 Prm	–	Select the parameter controlled by MIDI controller 2
Control 2 Min	0.0–100.0%	Minimum value of the range of MIDI controller 2
Control 2 Max	0.0–100.0%	Maximum value of the range of MIDI controller 2

5) Saving a program

Up to 90 programs whose parameters you have edited can be saved as USER programs.

1. **Press the STORE key.**
   The PROGRAM indicator will blink, and a message will appear to ask the storing location.

If the USER program area is protected (i.e., if Memory Protect is ON), a message of "MEMORY PROTECTED" will appear.

If this occurs, turn off the Memory Protect utility function as explained on page 33 before storing your program.

2. The upper line of the display will show the title of the program that already occupies the storing destination.

Use the INC/DEC keys or the numeric keys to select the storing destination.

If you use the numeric keys to enter a number outside of the range of 1–90, a message of "**NO PROGRAM**No Type" will appear. Press the CANCEL key to return to the previous display.

3. To store the program, press the STORE key. To cancel, press the CANCEL key.

A message of "This Program is Stored" will appear briefly, and then the previous display will reappear.

If a number outside of the range of 1–90 has been entered using the numeric keys, a message of "**Store Number Error**" will appear. Press the CANCEL key to return to the previous display.

Program parameters 1 (Primary effects)

Reverberation (Reverb)

Key	Parameter	Value	Description
MAIN			
RevTime		0.3 ~ 99.0 s	Reverb time of primary reverberation (the time required for 60 dB of decay at 1 kHz)
IniDelay		0.1 ~ 200.0 ms	Delay time until the primary reverb begins
HighRatio		X0.1 ~ X1.0	Reverb time of the high frequency components of the reverb; relative to RevTime
LowRatio		X0.1 ~ X2.4	Reverb time of the low frequency components of the reverb; relative to RevTime
Diffusion		0 ~ 10	Spread of the reverb sound
FINE			
Reverb Type		*1	Type of reverb tone
ER/REV Balance		0/100 ~ 100/0	Level balance between early reflections and reverb
ER/REV Delay		0.1 ~ 100.0 ms	Time difference between beginning of early reflections and beginning of reverb
Liveness		0 ~ 10	Decay characteristics of early reflections; 0:dead, 10:live
Density		0 ~ 100	Density of the early reflections
HPF		Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of the high pass filter
LPF		400 Hz ~ 20 kHz, Thru	Cutoff frequency of the low pass filter
Rev2 Time		X0.1 ~ X10.0	Decay time of the secondary reverb; relative to primary reverb
Rev2 Delay *2		0.0 ~ 100.0 ms	Time difference between primary reverb and secondary reverb
Rev2 Level *2		0 ~ 100%	Level of secondary reverb; relative to primary reverb
Mod Freq		0.05 ~ 40.00 Hz	Frequency of reverb modulation
Mod Depth		0 ~ 100%	Depth of reverb modulation
Mod Delay		0.1 ~ 30 ms	Shorter values produce modulation in the high range, longer values in the low range.
Common parameters		Refer to “Common parameters” on page 27	

*1 Small Hall, Large Hall, Vocal plate, Perc.Plate, Spring, Echo Room, Strings, Snare, Reverb Flange
*2 Only when the input mode is either L-Mono, R -Mono, or LR-Mix.

Early Reflections (ER)

Key	Parameter	Value	Description
MAIN			
	ER Type	*1	Type of early reflection simulation
	IniDelay	0.1 ~ 200.0 ms	Delay time until early reflections are heard
	Liveness	0 ~ 10	Decay characteristics of the early reflections; 0: dead, 10: live
	RoomSize	0.1 ~ 25.0	Spacing of reflections
	Diffusion	0 ~ 10	Spread of the early reflections
FINE			
	ER Number	1 ~ 40	Number of early reflections
	FeedBack Delay	0.1 ~ 1000.0 ms	Delay time of feedback
	FeedBack Gain	–99 ~ +99%	Amount of feedback; "-" inverts the phase
	FeedBack High	0.1 ~ 1.0	Amount of high range feedback; relative to FeedBack Gain
	Density	0 ~ 100	Density of reflections
	HPF	Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of high pass filter
	LPF	400 Hz ~ 20 kHz, Thru	Cutoff frequency of low pass filter
	Space Mod	0 ~ 10	Modulation level
	Common parameters	Refer to "Common parameters" on page 27	

*1 Small Hall, Large Hall, Random, Reverse, Plate, Spring, User A, User B, User C, User D

User ER parameter

There are four User ER banks; A–D.
For each bank, you can specify 40 reflections.
For each reflection, you can specify the delay time, level, and panning.

Key	Parameter	Value	Description
FINE			
	A-01 Delay	0.1 ~ 1000.0 ms	Delay time of first reflection of bank A
	A-01 Level	–100 ~ +100%	Level of first reflection of bank A
	A-01 Pan	L16 ~ R16	Pan position of first reflection of bank A
	•		
	•		
	•		
	D-40 Pan		
	Return to the beginning of FINE (ER Number)		

Room Simulation (RoomSim)

Key	Parameter	Value	Description
MAIN			
RevTime		0.3 ~ 99.0 s	Decay time of reverb
IniDelay		0.1 ~ 200.0 ms	Delay time until reverb is heard
Width		0.5 ~ 46.7 m	Simulation of room width
Height		0.5 ~ 46.7 m	Simulation of ceiling height
Depth		0.5 ~ 46.7 m	Simulation of room depth
Wall Vary		0 ~ 30	Simulation of wall roughness (flat 0 → rough 30)
Wall Vary Fine		–100 ~ +100	Fine adjustment of wall simulation
Listening Position		Front, Center, Rear	Seating position in the room
HighRatio		X0.1 ~ X1.0	Decay time of high range reverb components; relative to Rev-Time
LowRatio		X0.1 ~ X2.4	Decay time of low range reverb components; relative to Rev-Time
Diffusion		0 ~ 10	Spread of the reverb sound
Width Fine		–100 ~ +100	Fine adjustment of width simulation
Height Fine		–100 ~ +100	Fine adjustment of height simulation
Depth Fine		–100 ~ +100	Fine adjustment of depth simulation
Width Decay		RT X0.1 ~ 10.0	Decay time of width component of reverb; relative to Rev-Time
Height Decay		RT X0.1 ~ 10.0	Decay time of height component of reverb; relative to Rev-Time
Depth Decay		RT X0.1 ~ 10.0	Decay time of depth component of reverb; relative to Rev-Time
FINE			
ER/REV Balance		0/100 ~ 100/0	Level balance of early reflections and reverb
ER/REV Delay		0.1 ~ 100.0 ms	Time difference between early reflections and reverb
Density		0 ~ 100	Density of reflections
HPF		Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of high pass filter
LPF		400 Hz ~ 20 kHz, Thru	Cutoff frequency of low pass filter
Space Mod		0 ~ 10	Modulation level
Common parameters		Refer to “Common parameters” on page 27	

Reverb + Echo (Rev + Ech)

Key	Parameter	Value	Description
MAIN			
	REV RevTime	0.3 ~ 99.0 s	Refer to “Reverberation” items on page 18
	REV IniDelay	0.1 ~ 200.0 ms	
	REV HighRatio	X0.1 ~ X1.0	
	REV LowRatio	X0.1 ~ X2.4	
	REV Diffusion	0 ~ 10	
	ECHO Lch Delay	0.1 ~ 400.0 ms	Left channel delay time
	ECHO Rch Delay	0.1 ~ 400.0 ms	Right channel delay time
	ECHO Lch FeedBack	–99 ~ +99%	Left channel feedback amount
	ECHO Rch FeedBack	–99 ~ +99%	Right channel feedback amount
	ECHO High Ratio	0.1 ~ 1.0	High range feedback amount
FINE			
	ECHO/REV Balance *1	0/100 ~ 100/0	Level balance of echo and reverb
	REV Rev Mix *2	0 ~ 100%	Reverb amount
	REV Reverb Type	*3	Type of reverb tone
	REV Density	0 ~ 100	Density of reverb
	REV HPF	Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of reverb high pass filter
	REV LPF	400 Hz ~ 20 kHz, Thru	Cutoff frequency of reverb low pass filter
	REV Space Mod	0 ~ 10	Modulation level of reverb
	ECHO Lch IniDelay	0.1 ~ 400.0 ms	Time until the L channel echo appears
	ECHO Rch IniDelay	0.1 ~ 400.0 ms	Time until the R channel echo appears
	REV Patch	*4	Connection of reverb and echo
	Common parameters	Refer to “Common parameters” on page 27	

*1 Only when REV Patch is parallel (Reverb + Echo)
*2 Only when REV Patch is serial (Reverb → Echo, Echo → Reverb)
*3 Hall, Room, Vocal, Plate
*4 Reverb + Echo, Echo → Reverb, Reverb → Echo

Reverb + Early Reflections (Rev + ER)

Key	Parameter	Value	Description
MAIN			
	REV RevTime	0.3 ~ 99.0 s	Refer to “Reverberation” items on page 18
	REV IniDelay	0.1 ~ 200.0 ms	
	REV HighRatio	X0.1 ~ X1.0	
	REV LowRatio	X0.1 ~ X2.4	
	REV Diffusion	0 ~ 10	
	ER Type	*1	Refer to “Early reflection” items on page 19
	ER IniDelay	0.1 ~ 100.0 ms	
	ER Liveness	0 ~ 10	
	ER RoomSize	0.1 ~ 25.0	
	ER Diffusion	0 ~ 10	
FINE			
	ER/REV Balance *2	0/100 ~ 100/0	Level balance of ER and reverb
	REV Rev Mix *3	0 ~ 100%	Reverb amount
	REV Reverb Type	*4	Type of reverb tone
	REV Density	0 ~ 100	Density of reverb
	REV HPF	Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of reverb high pass filter
	REV LPF	400 Hz ~ 20 kHz, Thru	Cutoff frequency of reverb low pass filter
	REV Space Mod	0 ~ 10	Modulation level of reverb
	ER Number	1 ~ 14	Number of early reflections
	ER Density	0 ~ 100	Density of early reflections
	ER HPF	Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of ER high pass filter
	ER LPF	400 Hz ~ 20 kHz, Thru	Cutoff frequency of ER low pass filter
	REV Patch	*5	Connection of reverb and ER
	Common parameters	Refer to “Common parameters” on page 27	

*1 Small Hall, Large Hall, Random, Reverse, Plate, Strings
*2 Only when REV Patch is parallel (Reverb + ER)
*3 Only when REV Patch is serial (Reverb → ER, ER → Reverb)
*4 Hall, Room, Vocal, Plate
*5 Reverb + E.Ref., E.Ref. → Reverb, Reverb → E.Ref.

Reverb + Chorus (Rev + Cho)

Key	Parameter	Value	Description
MAIN			
REV RevTime		0.3 ~ 99.0 s	Refer to “Reverberation” items on page 18
REV IniDelay		0.1 ~ 200.0 ms	
REV HighRatio		X0.1 ~ X1.0	
REV LowRatio		X0.1 ~ X2.4	
REV Diffusion		0 ~ 10	
CHO Mod Freq		0.05 ~ 40.00 Hz	Chorus modulation frequency
CHO DM Depth		0 ~ 100%	Chorus delay time modulation depth
CHO AM Depth		0 ~ 100%	Chorus amplitude modulation depth
FINE			
CHO/REV Balance *1		0/100 ~ 100/0	Level balance of chorus and reverb
REV Rev Mix *2		0 ~ 100%	Reverb amount
REV Reverb Type		*3	Type of reverb tone
REV Density		0 ~ 100	Density of reverb
REV HPF		Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of reverb high pass filter
REV LPF		400 Hz ~ 20 kHz, Thru	Cutoff frequency of reverb low pass filter
REV Space Mod		0 ~ 10	Modulation level of reverb
REV Patch		*4	Connection of reverb and ER
Common parameters		Refer to “Common parameters” on page 27	

*1 Only when REV Patch is parallel (Reverb + Chorus)
*2 Only when REV Patch is serial (Reverb → Chorus, Chorus → Reverb)
*3 Hall, Room, Vocal, Plate
*4 Reverb + Chorus, Chorus → Reverb, Reverb → Chorus

Reverb + Symphonic (Rev + Sym)

Key	Parameter	Value	Description
MAIN			
	REV RevTime	0.3 ~ 99.0 s	Refer to “Reverberation” items on page 18
	REV IniDelay	0.1 ~ 200.0 ms	
	REV HighRatio	X0.1 ~ X1.0	
	REV LowRatio	X0.1 ~ X2.4	
	REV Diffusion	0 ~ 10	
	SYM Mod Freq	0.05 ~ 40.00 Hz	Symphonic modulation frequency
	SYM Depth	0 ~ 100%	Symphonic modulation depth
FINE			
	SYM/REV Balance *1	0/100 ~ 100/0	Level balance of reverb and symphonic
	REV Rev Mix *2	0 ~ 100%	Reverb amount
	REV Reverb Type	*3	Type of reverb tone
	REV Density	0 ~ 100	Density of reverb
	REV HPF	Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of reverb high pass filter
	REV LPF	400 Hz ~ 20 kHz, Thru	Cutoff frequency of reverb low pass filter
	REV Space Mod	0 ~ 10	Modulation level of reverb
	REV Patch	*4	Connection of symphonic and reverb
	Common parameters	Refer to “Common parameters” on page 27	

*1 Only when REV Patch is parallel (Reverb + Symphon)
*2 Only when REV Patch is serial (Reverb → Symphon, Symphon → Reverb)
*3 Hall, Room, Vocal, Plate
*4 Reverb + Symphon, Symphon → Reverb, Reverb → Symphon

Reverb + Flanger (Rev + Flg)

Key	Parameter	Value	Description
MAIN			
REV RevTime		0.3 ~ 99.0 s	Refer to “Reverberation” items on page 18
REV IniDelay		0.1 ~ 200.0 ms	
REV HighRatio		X0.1 ~ X1.0	
REV LowRatio		X0.1 ~ X2.4	
REV Diffusion		0 ~ 10	
FLA Mod Freq		0.05 ~ 40.00 Hz	Modulation frequency of the flanger
FLA Depth		0 ~ 100%	Modulation depth of flanger
FLA Delay		0.1 ~ 100.0 ms	Larger values produce modulation in the low range, and smaller values in the high range
FLA FeedBack Gain		0 ~ 100%	Feedback amount of the flanger
FINE			
FLA/REV Balance *1		0/100 ~ 100/0	Level balance of reverb and flanger
REV Rev Mix *2		0 ~ 100%	Reverb amount
REV Reverb Type		*3	Type of reverb tone
REV Density		0 ~ 100	Density of reverb
REV HPF		Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of reverb high pass filter
REV LPF		400 Hz ~ 20 kHz, Thru	Cutoff frequency of reverb low pass filter
REV Space Mod		0 ~ 10	Modulation level of reverb
REV Patch		*4	Connection of flanger and reverb
Common parameters		Refer to “Common parameters” on page 27	

*1 Only when REV Patch is parallel (Reverb + Flange)
*2 Only when REV Patch is serial (Reverb → Flange, Flange → Reverb)
*3 Hall, Room, Vocal, Plate
*4 Reverb + Flange, Flange → Reverb, Reverb → Flange

Reverb + Pitch Change (Rev + Pit)

Key	Parameter	Value	Description
MAIN			
REV RevTime		0.3 ~ 99.0s	Refer to “Reverberation” items on page 18
REV IniDelay		0.1 ~ 200.0 ms	
REV HighRatio		X0.1 ~ X1.0	
REV LowRatio		X0.1 ~ X2.4	
REV Diffusion		0 ~ 10	
PIT Pitch 1		↓Oct ~ ↑Oct	Shift amount of pitch 1
PIT Pitch 2		↓Oct ~ ↑Oct	Shift amount of pitch 2
PIT Fine 1		–100 ~ +100 cent	Fine adjustment to shift amount of pitch 1
PIT Fine 2		–100 ~ +100 cent	Fine adjustment to shift amount of pitch 2
PIT Delay 1		0.1 ~ 300.0 ms	Pitch 1 delay time
PIT Delay 2		0.1 ~ 300.0 ms	Pitch 2 delay time
PIT Feedback 1		0 ~ 99%	Pitch 1 feedback amount
PIT Feedback 2		0 ~ 99%	Pitch 2 feedback amount
PIT Pan 1		L16 ~ R16	Pitch 1 pan position
PIT Pan 2		L16 ~ R16	Pitch 2 pan position
FINE			
PIT/REV Balance *1		0/100 ~ 100/0	Level balance of reverb and pitch change
REV Rev Mix *2		0 ~ 100%	Reverb amount
REV Reverb Type		*3	Type of reverb tone
REV Density		0 ~ 100	Density of reverb
REV HPF		Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of reverb high pass filter
REV LPF		400 Hz ~ 20 kHz, Thru	Cutoff frequency of reverb low pass filter
REV Space Mod		0 ~ 10	Modulation level of reverb
PIT Pitch Balance		0 ~ 100%	Balance of direct sound and pitch shifted sound
PIT Base Key		OFF, C1 ~ C6	*5
REV Patch		*4	Selection of effect combination
Common parameters		Refer to “Common parameters” on page 27	

*1 Only when REV Patch is parallel (Reverb + Pitch)
*2 Only when REV Patch is serial (Reverb → Pitch, Pitch → Reverb)
*3 Hall, Room, Vocal, Plate
*4 Reverb + Pitch, Pitch → Reverb, Reverb → Pitch
*5 Set this parameter when you wish to use note messages from a MIDI keyboard etc. to control the pitch difference between the input sound and the pitch shifted sound.
The pitch difference between the input sound and the pitch shifted sound will be determined by the pitch difference between the Base Key specified by this parameter and the note-on message that is received. For example if the Base Key is set to C4, an incoming note-on message of C3 would shift the pitch down one octave, and an incoming note-on message of D4 would shift the pitch up a whole step.
* MIDI note number 60 is considered C3.
* The range of the actual pitch change is ±1 octave, so even if the specified pitch difference exceeds 1 octave, the resulting pitch change will stay within this range.
* If Base Key is set OFF, MIDI note-on messages will not control the pitch.
* When using MIDI note-on messages to control the amount of the pitch shift, the pitch of the last-input note-on message will set the Pitch parameter.

Reverb + Auto Pan (Rev + PAN)

Key	Parameter	Value	Description
MAIN			
	REV RevTime	0.3 ~ 99.0 s	Refer to “Reverberation” items on page 18
	REV IniDelay	0.1 ~ 200.0 ms	
	REV HighRatio	X0.1 ~ X1.0	
	REV LowRatio	X0.1 ~ X2.4	
	REV Diffusion	0 ~ 10	
	PAN Speed	0.05 ~ 40.00 Hz	Modulation frequency of auto-pan
	PAN Depth	0 ~ 100%	Modulation depth of auto-pan
	PAN Direction	L→R, L←R, L ↔R	Direction of panning movement
FINE			
	PAN/REV Balance *1	0/100 ~ 100/0	Level balance of reverb and auto-pan
	REV Rev Mix *2	0 ~ 100%	Reverb amount
	REV Reverb Type	*3	Type of reverb tone
	REV Density	0 ~ 100	Density of reverb
	REV HPF	Thru, 40 Hz ~ 1.0 kHz	Cutoff frequency of reverb high pass filter
	REV LPF	400 Hz ~ 20 kHz, Thru	Cutoff frequency of reverb low pass filter
	REV Space Mod	0 ~ 10	Modulation level of reverb
	REV Patch	*4	Connection of auto-pan and reverb
	Common parameters	Refer to “Common parameters” on page 27	

*1 Only when REV Patch is parallel (Reverb + PAN)
*2 Only when REV Patch is serial (Reverb → PAN, PAN → Reverb)
*3 Hall, Room, Vocal, Plate
*4 Reverb + PAN, PAN → Reverb, Reverb → PAN

Common parameters

Key	Parameter	Value	Description
FINE			
	1stRef-1 Delay	0.1 ~ 200.0 ms	Delay time of reflection 1
	1stRef-1 Lvl	0 ~ 100%	Level of reflection 1
	1stRef-1 Pan	L16 ~ R16	Pan position of reflection 1
	1stRef-2 Delay	0.1 ~ 200.0 ms	Delay time of reflection 2
	1stRef-2 Lvl	0 ~ 100%	Level of reflection 2
	1stRef-2 Pan	L16 ~ R16	Pan position of reflection 2
	Input Mix *1	0 ~ 100%	Stereo-mix adjustment
	continues to DFL		

*1 Only for stereo mode

Program paramaters 2 (Secondary effects)

DFL

By using the dynamic filter you can create wah effects in which the frequency response is changed by the level of the input signal.

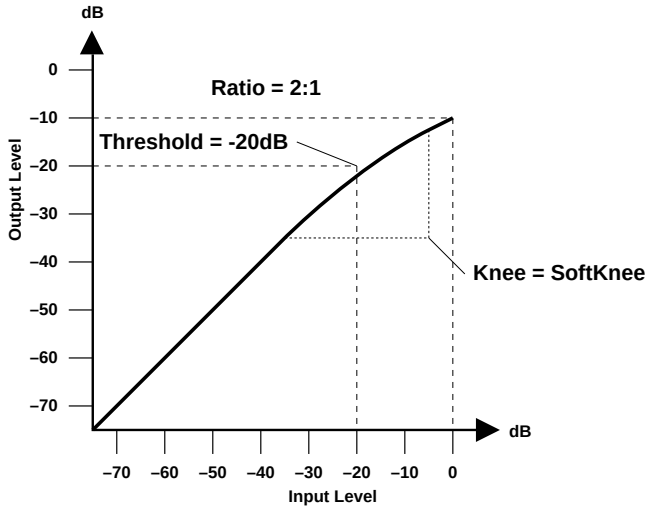
Key	Parameter	Value	Description
FINE			
	DFL Dynamic Filter	OFF, ON	DFL effect on/off
	DFL Filter Type	LPF, HPF, BPF	Filter type selection
	DFL Frq.Center	100 Hz ~ 3.2 kHz	Center frequency of the filter
	DFL Resonance	0 ~ 20	Filter resonance
	DFL Shift	Up/Down	Direction in which center frequency will change in response to the level of the input signal
	DFL Sens	1 ~ 10	Sensitivity to the input signal
	DFL Decay	1 ~ 10	Speed at which the center frequency will return after shifting
	DFL Patch	PreREV, PostREV	Place the filter patch point before or after the reverb

continues to COMP

COMP

The compressor can be used to compress level changes in the input signal, enhancing presence even for low level signals.

In the last page of the compressor parameters, the amount of gain reduction is shown as a bar graph, allowing you to see the operation of the compressor



Key	Parameter	Value	Description
FINE			
COMP Compressor		OFF/ON	Compressor on/off
COMP Threshold Level		–54 ~ 0 dB	Threshold level
COMP Output Level		–15 ~ +15 dB	Compressor output level
COMP Ratio		1:1 ~ 00:1	Compression ratio
COMP Knee		SoftKnee, Medium, HardKnee	Mode of change in threshold level
COMP Attack Time		0 ~ 500 ms	Attack time
COMP Release Time		6 ~ 2400 ms	Release time
COMP GR		Bar graph	Gain reduction amount is displayed as a bar graph
Return to the beginning of FINE (However if the primary effect is ER, continue to User ER)			

EQ

A three-band parametric equalizer is located after the compressor, allowing you to adjust the low, mid, and high frequency ranges of the sound.

	LOW	MID	HIGH
Type	Peaking/Shelving	Peaking	Peaking/Shelving
Gain	±15 dB	±15 dB	±15 dB
Frequency	32 Hz to 2.2 kHz	250 Hz to 5.6 kHz	500 Hz to 20 kHz
Q	0.1 to 5.0	0.1 to 5.0	0.1 to 5.0

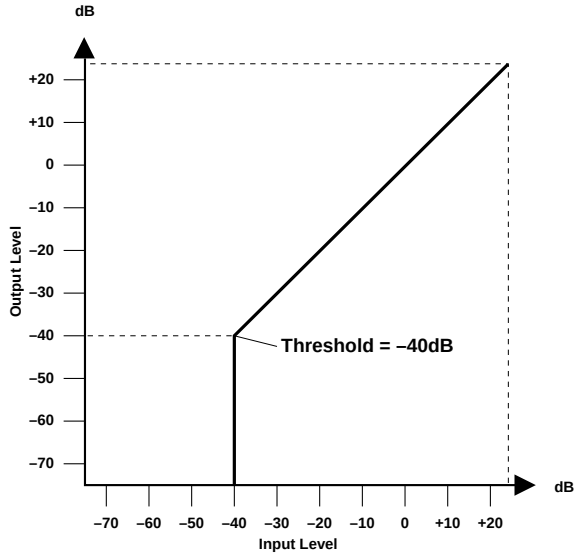
Key	Parameter	Value	Description
EQ			
Low EQ Type		Peaking, Shelving	Select EQ type for low range
Low Gain		–15 ~ +15 dB	Set low range gain
Low Freq		32 Hz ~ 2.2 kHz	Adjust low range frequency
Low Q *1		0.1 ~ 5.0	Set Q factor of low range
Mid Gain		–15 ~ +15 dB	Set mid range gain
Mid Freq		250 Hz ~ 5.6 kHz	Adjust mid range frequency
Mid Q		0.1 ~ 5.0	Set Q factor of mid range
High EQ Type		Peaking, Shelving	Select EQ type for high range
High Gain		–15 ~ +15 dB	Set high range gain
High Freq		500 Hz ~ 20 kHz	Adjust high range frequency
High Q *1		0.1 ~ 5.0	Set Q factor of high range
EQ ON			
POST EQ		OFF/ON	Equalizer on/off

*1 When EQ Type is Peaking

GATE

The gate allows you to create gated reverb effects.

Gated reverb is an effect in which the reverb sound is cut off during its decay by detecting the level of the signal and opening and closing a gate.

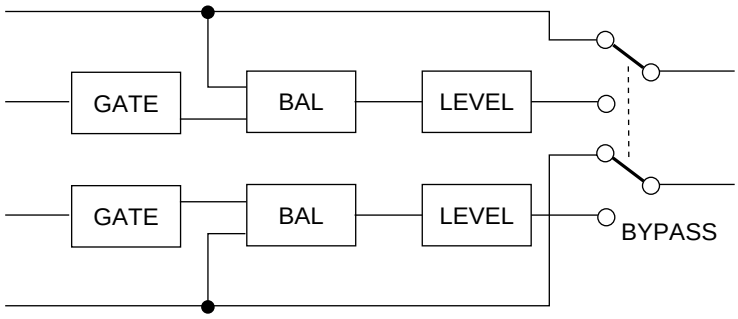


Key	Parameter	Value	Description
GATE			
	Threshold Level	–60 ~ 0 dB	Threshold
	Trigger Delay	0.1 ~ 100 ms	Delay until the gate functions
	Hold Time	1 ~ 5759 ms	Time from the hold time that the gate remains open
	Release time	6 ~ 24000 ms	Time from the hold time until the gate closes
	MIDI Trigger	OFF/ON	External MIDI control settings related to gating
	Detect	at-GATE, Pre-REV	Point at which level is detected
	GATE GR	Bar graph	Gate open/shut operation is shown by a bar graph
GATE ON			
	Gate	OFF/ON	Gate on/off

LEVEL/BAL

Here you can set the output level.

You can also adjust the balance between the direct sound and the effect sound.



Key	Parameter	Value	Description
LEVEL/BAL			
	Effect Balance	0 ~ 100%	Ratio of effect sound and direct sound
	Output Level	–∞, –50 ~ +6 dB	Output level adjustment

Advanced uses (3) – Utility functions –

Here's how to make settings for system parameters such as memory protect, input mode, and MIDI parameters.

Memory protect settings

1. **Press the UTILITY key to access the memory protect page.**
   The red indicator will light.

2. **Press the INC or DEC key to turn the setting ON or OFF.**
   This function protects the data in USER program memory from being accidentally overwritten.

   ON: Write prohibit
   OFF: Write permit

Input mode setting

The ProR3 has four input modes; Stereo, LR-Mix, R-Mono, and L-Mono.

1. **Press the UTILITY key to access the input mode page.**

2. **Press the INC or DEC key to select the input mode.**

LR-MIX: The left and right input signals will be mixed and processed. The effect sound will be of higher quality than for STEREO.
STEREO: The left and right input signals will be processed separately, and the stereo placement of the input sound will be reflected in the effect sound as well.
L-Mono: Only the left input signal will be processed, and the bypass signal will be output to left and right.
R-Mono: Only the right input signal will be processed, and the bypass signal will be output to left and right.

MIDI channel setting

Here's how to set the MIDI transmit and receive channel.

1. Press the UTILITY key to access the MIDI channel setting page.

2. Press the INC or DEC key to set the channel.

OMNI: All channels 1–16 will be received, and the transmit channel will be 1.
1–16: Transmission and reception will take place on the specified channel.
OFF: MIDI data will be neither transmitted nor received.

Setting the MIDI program change table

You can make settings for each of the four MIDI program change table banks of the ProR3. With the factory preset settings, MIDI program numbers 1–90 correspond to USER program numbers 1–90, and MIDI program numbers 91–128 correspond to PRESET program numbers 1–38.

1. Repeatedly press the UTILITY key until the MIDI program change table page appears.

2. Use the CURSOR keys (◄) (►) to select a parameter.

3. Press the INC or DEC key to set the parameter. You can also use the numeric keys to directly enter a MIDI program number.

BANK	A–D	Specify the program change bank
PGM	1–128	The MIDI program number
ProR	U01–U90, P01–P90 ---	This is the ProR3 program number which will be recalled when the MIDI program number is received. U01–U90 and P01–P90 respectively indicate USER and PRESET program numbers. With a setting of ..., nothing will be recalled. *

* --- also can be input by CANCEL key.

Transmitting a MIDI bulk dump

The ProR3 allows you to transmit any type of data as a bulk dump; memory, program memory (all programs or a specified program), banks, user ER, or system memory.

1. **Repeatedly press the UTILITY key until the MIDI Bulk Out page appears.**

2. **Use the CURSOR keys (◄) (►) to select a parameter.**

3. **Press the INC or DEC key to select the value.**

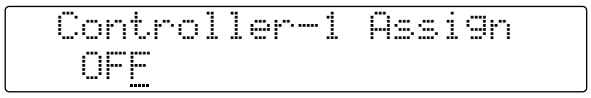
All		All data (Program, Bank, UserER, System)
Program	U01–U90, All	The data of the specified USER program. If All is selected, data for all USER programs.
Bank	A–D, All	The data of the specified Bank program change table. If All is selected, data for all Bank data.
UserER	A–D, All	The specified User ER data If All is selected, all User ER data.
System		System data settings made for utility functions such as Input Mode, etc.

4. **Press the RECALL/ENTER key to execute the bulk dump.**
   Before you begin transmission, make sure that the MIDI device to which the ProR3 is connected is ready to receive a bulk dump.

Assigning MIDI controllers

Here's how to assign MIDI control numbers to the two controllers. The ProR3 can respond to two controllers, and a separate page is provided to make settings for each controller.

1. **Repeatedly press the UTILITY key until one of the controller assign pages appears.**



2. **Press the INC or DEC key to specify the control number.**
   The parameter selected in "Setting MIDI control parameters" of page 16 can be controlled in real-time by receiving the specified control change message.

Initializing the ProR3

If you wish to restore the ProR3 to the factory settings, use the following procedure to initialize it.

1. **Hold down the STORE key and press the POWER switch to turn the power on.**
   The following message will appear in the display; "Press [ENTER] to initialize ProR3".

2. **Press the RECALL/ENTER key to execute initialization.**
   Pressing any other key will cancel the procedure.

   Warning: When you initialize, all user data will be erased. All settings of user programs, the program change tables, and system-related settings will return to the factory default settings.

   Before you press RECALL/ENTER, check once again that you really want to execute initialization.

ERROR Messages of the ProR3

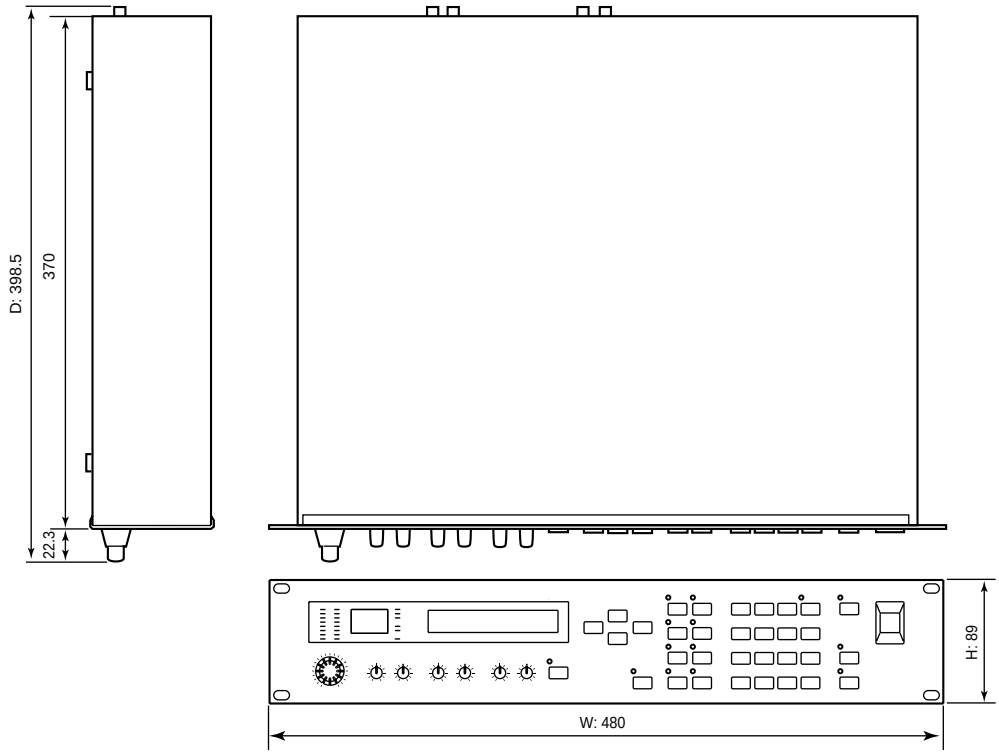
"* Program Number Error *"	Selected a program number greater than 90.
"****** Data Error ******"	General data error. If necessary, re-initialize the ProR3.
"** Store Number Error **"	Selected a program number greater than 90.
"** MEMORY PROTECTED ! **"	Memory protection command of the UTILITY function is ON.
" LOW BATTERY "	The internal battery is low. Take the unit to a Yamaha service center to have the battery replaced.

Specifications

Audio Characteristics	Frequency response	20 Hz ~ 20 kHz, +1.0 dB, –1.5 dB
	Dynamic range	110 dB (typical), not less than 104 dB
	Hum and noise *1	less than –80 dB *2
	Distortion	less than 0.007% (1 kHz, maximum level)
Input	Number of channels	2 (balanced signal)
	Nominal level	+4 dB / –10 dB *2
	Maximum level	+24 dB (with level switch at +4 dB) *2
	Impedance	20 kΩ
Output	Number of channels	2 (balanced signal)
	Nominal level	+4 dB / –10 dB *2
	Maximum level	+24 dB (with level switch at +4 dB) *2
	Impedance	150 Ω
A/D and D/A Convertors	A/D convertors	20-bit linear
	D/A convertors	20-bit linear
	Sampling frequency	44.1 kHz
Program Memory	Preset programs	1 ~ 90
	User programs	1 ~ 90
MIDI Control	Program change, Control change, Bulk dump, Note ON, Parameter change	
Power Requirements	USA and Canada	120V AC, 60 Hz
	General	230V AC, 50 Hz
Power Consumption	35W	
Dimensions (W × D × H)	480 × 398.5 × 89 mm	
Weight	5.5 kg	
Front panel	Controls	INPUT Level
		PRE EFFECT EQ - FREQ × 3 (LOW, MID, HIGH)
		PRE EFFECT EQ - GAIN × 3 (LOW, MID, HIGH)
	Buttons	ON (PRE EFFECT EQ) *3, ◄ (left CURSOR button), ► (right CURSOR button), INC (DATA button) DEC (DATA button), COMPARE *3, MAIN *3 FINE *3, EQ *3, EQ ON *3, GATE *3, GATE ON *3 LEVEL/BAL *3, OTHERS *3, Numeric keypad (including "-" and "." buttons), PROGRAM *3, STORE, CANCEL RECALL/ENTER, INFINITE *3, UTILITY *3, BYPASS *3
	Switch	POWER
	Displays	24 character × 2 lines LCD 8-segment LED – INPUT level meters × 2 7-segment LED – PROGRAM number 6-segment LED – Status indicators Button LED indicators × 14
Rear Panel	Connectors	INPUT L/R (XLR-3-31 × 2) and (1/4" phone jacks × 2) OUTPUT L/R (XLR-3-32 × 2) and (1/4" phone jacks × 2) MIDI – IN, OUT, THRU (5P DIN × 3)
	Switches	Level switch (+4/–10) × 2

*1 Hum & Noise are measured with a filter equivalent to a 20 Hz to 20 kHz band-pass filter that has an infinite dB/octave attenuation.
*2 0 dB = 0.755 Vrms.
*3 LED above the button.

Dimensions



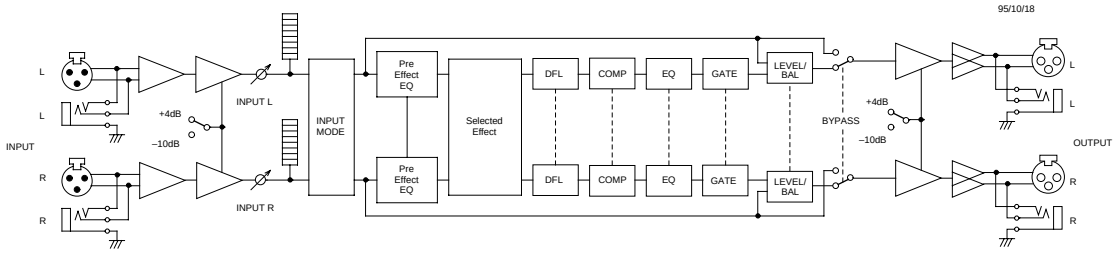
Unit: mm

All specifications subject to change without notice.

For European Model
Purchaser/User Information specified in EN55103-1 and EN55103-2.

Inrush Current: <1A
Conformed Environment: E1, E2, E3 and E4

Block Diagram



MIDI data format

1. Transmitted data

1-1 System information

#1 Program bulk data

This data can be transmitted on the currently selected MIDI channel.

This data is transmitted when you select a program in the Utility Bulk Dump display and execute, or when a Program Bulk Dump Request message is received.

Data will be transmitted for the User program of the specified number.

Also, if the program number is "A11", data for User programs 1–90 will be transmitted consecutively.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0000nnnn(0nH)	n=0-15
FORMAT No.	01111110(7EH)	
BYTE COUNT	00000010(02H)	
BYTE COUNT	01111000(64H)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01001101(4DH)	"M"
PROGRAM No.	0mmmmmmm	m=1-90
DATA	0ddddddd	Memory bulk (346bytes)
		0ddddddd
CHECK SUM	0eeeeeee	
EOX	11110111(F7H)	

#2 Bank/Program Change Table bulk data

This data can be transmitted on the currently selected MIDI channel.

This data is transmitted when you select a bank in the Utility Bulk Out display and execute, or when a Program Change Table Bulk Dump Request message is received.

Also, if the memory number is “A11”, data for banks 1–4 (A through D) will be transmitted consecutively.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0000nnnn(0nH)	n=0-15
FORMAT No.	01111110(7EH)	
BYTE COUNT	00000010(02H)	
BYTE COUNT	00001010(0AH)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01010100(54H)	"T"
BANK No.	0zzzzzzz	z=1-4
DATA	0ddddddd	Bank Program change (256bytes)
	:	
	:	
	0ddddddd	
CHECK SUM	0eeeeeee	
EOX	11110111(F7H)	

#3 User ER Pattern bulk data

This data can be transmitted on the currently selected MIDI channel.

This data is transmitted when you select a User ER pattern in the Utility Bulk Out display and execute, or when a User ER Pattern Bulk Dump Request message is received.

Also, if the User ER number is “A11”, data for patterns 1–4 (A through D) will be transmitted consecutively.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0000nnnn(0nH)	n=0-15
FORMAT No.	01111110(7EH)	
BYTE COUNT	00000011(03H)	
BYTE COUNT	01010010(52H)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
		"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01000101(45H)	"E"
PATTERN No.	0zzzzzzz	z=1-4
DATA	0ddddddd	User ER pattern memory (480bytes)
	:	
	:	
	0ddddddd	
CHECK SUM	0eeeeeee	
EOX	11110111(F7H)	

#4 System Setup bulk data

This data can be transmitted on the currently selected MIDI channel.

This data is transmitted when you select System Setup in the Utility Bulk Out display and execute, or when a System Setup Bulk Dump Request message is received.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0000nnnn(0nH)	n=0-15
FORMAT No.	01111110(7EH)	
BYTE COUNT	00000000(00H)	
BYTE COUNT	00011010(1AH)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01010011(53H)	"S"
	00100000(20H)	space
DATA	0ddddddd	System setup memory (16bytes)
	:	
	:	
	0ddddddd	
CHECK SUM	0eeeeeee	
EOX	11110111(F7H)	

#5 Parameter Change data

This data can be transmitted on the currently selected MIDI channel.

This data is transmitted when ProR3 receives a Parameter Value Request message is received.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0001nnnn(1nH)	n=0-15
FORMAT No.	00011110(1EH)	
DEVICE CODE	00000101(05H)	
PARAMETER No.	0ppppppp	
	0ppppppp	
DATA	0ddddddd	Parameter change memory (5bytes)
	:	
	:	
	0ddddddd	
EOX	11110111(F7H)	

2. Receive data

2-1 Channel information

#1 Note On

This message can be received on the currently selected MIDI channel.

If the MIDI Trigger parameter is ON, it will be received as a gate trigger.

When a pitch-type reverb program is selected, it will be received to control the pitch. The velocity value is ignored. If the Base Key parameter is OFF, the pitch will not be controlled.

STATUS	1001nnnn(9nH)	n=0-15
NOTE No.	0kkkkkkk	k=0-127
VELOCITY	0vvvvvvv	v=0-127

#2 Control Change

This message can be received on the currently selected MIDI channel.

When this message is received, it will control the parameter being modified by the corresponding foot controller as specified by the Control Assign table.

STATUS	1011nnnn(BnH)	n=0-15
CONTROL No	0ccccccc	c=1-31, 64–95
CONTROL VALUE	0vvvvvvv	v=0–127

#3 Program Change

This message can be received on the currently selected MIDI channel.

When this message is received, a program will be selected as specified by the Program Change table of that bank.

STATUS	1100nnnn(CnH)	n=0-15
PROGRAM No.	0ppppppp	c=0-127

2-2 System information

#1 Program bulk dump request

This message can be received on the currently selected MIDI channel.

When this message is selected, the program of the specified User program number will be transmitted as bulk data.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0010nnnn(2nH)	n=0-15
FORMAT No.	01111110(7EH)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01001101(4DH)	"M"
PROGRAM No.	0mmmmmmm	m=1-90
EOX	11110111(F7H)	

#2 Bank/Program Change Table bulk dump request

This message can be received on the currently selected MIDI channel.

When this message is received, the Program Change Table of the specified bank will be transmitted as bulk data.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0010nnnn(2nH)	n=0-15
FORMAT No.	01111110(7EH)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01010100(54H)	"T"
BANK No.	0zzzzzzz	z=1-4
EOX	11110111(F7H)	

#3 User ER Pattern bulk dump request

This message can be received on the currently selected MIDI channel.

When this message is received, the data for the ER Pattern of the specified number will transmitted as bulk data.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0010nnnn(2nH)	n=0-15
FORMAT No.	01111110(7EH)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01000101(45H)	"E"
PATTERN No.	0zzzzzzz	z=1-4
EOX	11110111(F7H)	

#4 System Setup bulk dump request

This message can be received on the currently selected MIDI channel.

When this message is received, the System Setup data will transmitted as bulk data.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0010nnnn(2nH)	n=0-15
FORMAT No.	01111110(7EH)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01010011(53H)	"S"
	00100000(20H)	Space
EOX	11110111(F7H)	

#5 Bank Change request

This message can be received on the currently selected MIDI channel.

When this message is received, the specified bank will be selected.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0010nnnn(2nH)	n=0-15
FORMAT No.	01111110(7EH)	
	01001100(4CH)	"L"
	01001101(4DH)	"M"
	00100000(20H)	Space
	00100000(20H)	Space
	00111000(38H)	"8"
	01000001(41H)	"A"
	00111000(38H)	"8"
	00110011(33H)	"3"
DATA NAME	01010101(55H)	"U"
BANK No.	0zzzzzzz	z=1-4
EOX	11110111(F7H)	

#6 Program bulk dump

The transmitted data is identical to “Program bulk data.”

#7 Bank/Program Change Table bulk data

The transmitted data is identical to “Bank/Program Change Table bulk data.”

#8 User ER Pattern bulk data

The transmitted data is identical to “User ER Pattern bulk data.”

#9 System Setup bulk data

The transmitted data is identical to “System Setup bulk data.”

#10 Parameter Change data

The transmitted data is identical to “Parameter Change data.”

#11 Parameter Value Request

This message can be received on the currently selected MIDI channel.

When this message is received, the value of the parameter specified by the parameter number will be transmitted as Parameter Change data.

STATUS	11110000(F0H)	
ID No.	01000011(43H)	
SUB STATUS	0010nnnn(2nH)	n=0-15
FORMAT No.	00011110(1EH)	
DEVICE CODE	00000101(05H)	
PARAMETER No.	0ppppppp	
	0ppppppp	
EOX	11110111(F7H)	

YAMAHA [Digital Reverberator] Date:11/1-1995
Model: ProR3 MIDI Implementation Chart Version:1.0

Function...		Transmitted	Recognized	Remarks
Basic	Default	x	1-16, off	Memorized
Channel	Changed	x	1-16, off	
	Default	x	OMNI on/OMNI off	Memorized
Mode	Messages	x	x	
	Altered	**********	x	
Note		x	0 - 127	*1
Number	: True voice	**********	x	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After	Key's	x	x	
Touch	Ch's	x	x	
Pitch Bend		x	x	
Control Change		x	1 - 31 64 - 95	
Prog		x	0 - 127	*2
Change	: True #	**********		
System Exclusive		o	o	Bulk Dump
	: Song Pos	x	x	
Common	: Song Sel	x	x	
	: Tune	x	x	
System	: Clock	x	x	
Real Time	: Commands	x	x	
	: Local ON/OFF	x	x	
Aux	: All Notes OFF	x	x	
Messages	: Active Sense	x	x	
	: Reset	x	x	

Notes *1 : Note ON/OFF is recognized only for pitch change and MIDI trigger.
*2 : For program 1 - 128, memory (preset #1 - #90, user #1 - #90) is selected.

o:Yes
x:No

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